INITIAL STATEMENT OF REASONS

Emergency Notice for Fuel Hazard Reduction, 2007

[Notice Publication August 17, 2007]

Title 14 of the California Code of Regulations (14 CCR):

Amend:

§ 895.1	Definitions
§ 1052	Emergency Notice
§ 1052.1	Emergency Conditions
§ 1052.4	Emergency Notice for Fuel Hazard Reduction

The California State Board of Forestry and Fire Protection (Board) proposes amendments to regulations for timber harvest practices that reduce wildfire threat and hazardous fuel conditions in the State's private timberlands. The amendments proposed modify fuel treatment standards, modify the minimum post harvest stocking standards, clarify treatment requirements, and establish a rule extension period. The proposal includes several Options among which the Board may choose as part of the action.

PUBLIC PROBLEM, ADMINISTRATIVE REQUIREMENT, OR OTHER CONDITION OR CIRCUMSTANCE THE REGULATION IS INTENDED TO ADDRESS (*applicable to all proposed rule subsections)*

Significant Wildfire Hazard

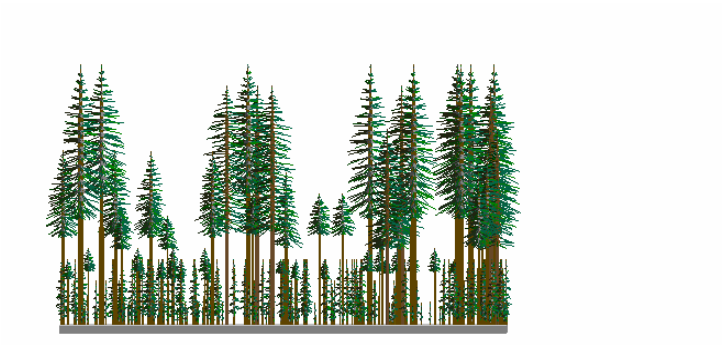
Vegetation fires can result in loss of life, property, and natural resources.

The Board recognizes the urgent, extensive and on-going wildfire hazard existing on private forest lands resulting from the combination of increasing quantity and arrangement of natural vegetation. Of particular concern are the wildfires in the Wild land Urban Interface areas where homes and development intermix with the wildland vegetation (Carey and Shumman, 2003). Conversely, forest managers are concerned about the spread of fire from these residential areas in to wildland areas and the impacts they have on natural resources and ecological systems such as habitats, water cycling and carbon sequestration.

Fire hazard, the combination of terrain and fuel types and condition, is steadily becoming more hazardous on timberlands. Recent measurements by the United States Department of Agriculture Forest Service (USFS) Forest Inventory and Analysis Program (FIA) indicate increasing level of stocking on private lands over the last three decades. While quantity of fuels is just one measure of fire hazards, another indicative factor is the density and arrangement of fuels (see figures below). Research by the

USFS Forest Health Monitoring Group suggests that million of acres of coniferous forest types have stand densities far beyond stocking levels associated with the site capacity. This suggests that stands are very susceptible to significant levels of pest mortality and increased dead fuel loads. When combined with on-going drought and atmospheric zone damage, these conditions can lead to catastrophic wildfire effects.

Dense understory provides ladder to main canopy.



The nature of the fuel hazard problem has also been repeatedly recognized by many high profile efforts. These include:

- Governor's Blue Ribbon Fire Commission of 2004 (State of California, 2004).
- California Department of Forestry and Fire Protection's Forest and Range 2003 Assessment
- General Accounting Office (GAO) report on western National Forest fire conditions (US GAO, 1999).
- Sierra Nevada Forest Plan Amendment, 2004

Extensive geographic area of wildfire hazard

While the significant fire hazard on California forests and rangeland covers over 48 million acres, the Board has focused its attention to problems on the non federal timberlands where there is a significant fire threat to human assets and natural resources. The Board's vision for the scope of the proposed action includes:

- target private timberlands (particularly non industrial timberlands);
- focus on lands with documented conditions which pose a significant fire threat and undesirable impacts to human assets and natural resources;
- prioritized areas in the Wildland Urban Interface, those areas where timberlands and houses are mixed together with human occupancy (houses) along with adjacent unpopulated timberlands;
- Treat areas to eliminate the vertical continuity of vegetative fuels and the horizontal continuity of tree crowns, for the purpose of reducing the rate of fire spread, fire duration and intensity, fuel ignitability, or ignition of tree crowns.

Although the geographic scope of the project is relatively large, it is likely that the application of the rule will affect substantially less area over the near term application of the emergency rule. This is due to several factors:

- not all timberlands within the geographic scope of the project have physical terrain characteristics that allow practical fuel reduction operability (terrain steepness, lack of adequate roads access, watercourse where operations are prohibited);

- hazard reduction removal standards focus on removal of surface and ladder fuels, not on commercial sized trees. As such, large industrial landowners are not likely to use this rule, as their management plans, professional capacity, and financial capability allow them to conduct management actions different from the proposed rule;

- projects are permitted when there is an agency approved fire plan or within a designated community at risk. This oversight helps identify the priority areas and avoid low need areas.

Appropriate fuel reduction aims to forestall and reduce the impact of what otherwise might be a truly catastrophic fire in a number of regions in California <u>before</u> it occurs.

Hazardous fuels management projects have demonstrated that they can significantly reduce the impacts of wildfires on both natural and human assets at risk by changing the intensity and often the extent of wildfire. The literature on the effectiveness is vast, and several "success stories" are listed on the Fire Plan website (http://fphqfp/fpweb/). An example is the Cone Fire burning into forested areas on the Blacks Mountain. Experimental Forest in adjacent Lassen County:

> *The Cone Fire tested the fuels treatments applied at Blacks Mt. Experimental Forest under severe fire behavior conditions of wind, low humidity, and low fuel moisture. Units which received both thinning of ladder fuels (biomass harvest) and a follow up prescribed fire to further reduce surface fuels had the wildfire drop to the ground where they extinguished or could be safely suppressed, while units which were just thinned of ladder fuels had sufficient surface fuels to severely scorch trees. Untreated forest burned the most severely, with total tree kill, forest floor consumption, and canopy consumption.*
> *Gary Nakamura, UC Cooperative Extension*
> http://ucce.ucdavis.edu/files/filelibrary/5098/5200.pdf

Hazardous fuels management projects must be deployed across the landscape if they are to change wildfire intensity and spread and thereby protect watershed values. While clearance around structures as required by Public Resources Code 4291 contributes to saving structures from a wildfire, that same fire burning through untreated vegetation can lead to severe watershed damage. Landscape level treatments, such as fuelbreaks or area treatments, complement structure clearance treatments by slowing the rate of spread and lowering intensity and therefore resource damage.

Expiration of existing regulation of 14 CCR 1052.4

One of the primary necessities of the proposed regulation is to extend the existing rule which is set to expire on January 1, 2008. Given monitoring information on the effectiveness of the fuel hazard treatments, the Board decided that an extension of the rule is appropriate.

Monitoring of fuel treatments under existing regulation indicates low rate of use

In 2005, the Board determined that a combination of performance and prescriptive standards for vegetative treatment requirements best meets hazard reduction goals. The performance standard components focus on meeting the goal of treatments to eliminate the vertical continuity of vegetative fuels and the horizontal continuity of tree crowns, for the purpose of reducing the rate of fire spread, fire duration and intensity, fuel ignitability, or ignition of tree crowns. The primary treatment standard used to obtain hazard reduction goals was a "post harvest fuel condition with maximum 4 foot flame lengths when burned under severe fire weather." This objective produces maximum fire safe conditions for structure protection and provides a location suitable for deployment of fire suppression crews**.**

This standard was found to be ambiguous to interpret and resulted in very intensive treatment of surface, ladder and crown fuels resulting in very 'clean" understory forest conditions because applicants and forest practice inspectors routinely required complete clean up of all slash to ensure compliance. This treatment level resulted in greater expense and level of hazard reduction then is necessary to meet hazard reduction goals.

This standard resulted in minimal acreages of hazard reduction because of the expense associated with implementing the prescription. With over a million acres of private timberlands suitable for this treatment, less than 3000 acres was treated since late 2004. Given this low rate of use, the Board focused on finding amendments that provide for adequate fuel hazard reduction and reduced costs of the fuel treatment.

Specific Purpose of Regulation

The primary purpose of the proposed regulation is to modify the fuel treatment standards to reduce economic impacts to those choosing to implement the regulation while reducing the wildfire hazard in the treated forest areas. The amendments proposed modify fuel treatment standards for economic efficiency, deletes the four foot flame length standard, establish new treatment standards that reduce fire hazards, modify the minimum post harvest stocking standards to allow more areas to be eligible for the treatments, clarify treatment requirements for better compliance, and establishes a rule extension period.

The proposed regulation provides several Options for the fuel modification standards, minimum post harvest stocking standards, and extension dates. In the cases of the vegetative standards options and the expiration date options, the Board must choose one option from each category. For the minimum stocking options, the Board must choose an option or they may leave the subsection unchanged by choosing none of the options.

14 CCR § 895.1 Definitions

The California Forest Practice Rules commonly utilize definitions of technical terms in the regulation text that are generally recognized by federal and state agencies, as well as the forest products industry representatives. However, the Forest Practice Rules under 14 CCR § 895.1 (Definitions) do not include a comprehensive listing of applicable definitions proposed for use in the regulation. Definitions are being added to allow for new terms and provide brevity and clarity in the proposed rule. Definitions being added include: *Fuels, ladder fuel, and surface fuel.* These definitions are needed to ensure that the prescribed fuel treatment method is applied to the appropriate fuel.

Two options for an extension period of definitions: The Board has provided Options for the length of time the definitions are effective. The dates coincide with other options for length of effective period for the entire regulation section. Option 1 provides for an extension of the definition until January 1, 2013. Option 1A, deletes the expiration date making the rule and the related definitions permanent with no expiration.

One definition is proposed for deletion. The deleted definition, *Average Severe Fire Weather Conditions***,** is eliminated as it was used as part of the four foot flame length rule, which has been deleted as part of this proposal.

Amend 14 CCR § 1052 Emergency Notice

This amendment provides two options (Options 1 and 1A). Option 1 extends the rule for five years until January 1, 2013. Option 1A makes the rule permanent

with no expiration. The Board must select one of these options. Additionally, amendments to this subsection also delete the reference to regulation intent where post harvest conditions meet the four foot flame length performance standards.

Amend 14 CCR § 1052.4 Emergency Notice for Fuel Hazard Reduction

Subsection (a) (4) is deleted. This deletion eliminates the use of the photo series as examples of compliance with the four foot flame length post harvest performance standard. With the Board proposing more measurable fuel treatment standards, and replacing the four foot standards, these photos series no longer solely depict the post harvest conditions and are unnecessary.

Two Options for locations where the regulation applies: Amendments to subsection (c) (5) and (6) clarify which mainline roads and fuelbreaks are applicable for treatments under terms of the regulation. Option 4 and 4A are proposed, and the Board must choose one of the options.

Option 4 deletes existing language for subsections (c) (5) and (6) and adds new language. The new language under Option 4 requires written concurrence of a public fire agency or acceptance by the Director for treatments within 500 feet of mainline roads or fuelbreaks. The deleted language required mainline roads or fuelbreaks eligible for this regulation to be identified in a fire prevention plan. Option 4 may increase the number of roads or fuelbreaks eligible for treatment under this regulation because not all areas have fire prevention plans. Option 4A would retain the existing language with no deletion or addition of text. Retaining existing language under Option 4A improves reliability that the most appropriate roads and fulebreaks are being treated under terms of this regulation.

Subsection (d) (3) (B) adds a fuel treatment standard for post harvest trees. The requirement specifies retaining no more than 200 trees per acre. This is intended to ensure that an adequate number of trees are removed to achieve adequate fire hazard reduction goals for the tree portion of the fuel profile.

Three options for post harvest Minimum Stocking Standards: Subsection (d) (4) amends the minimum post harvest stocking standard when preharvest conditions do not meet Commercial Thinning stocking standards. This amendment addresses situations in lower stocked forested areas of Southern California where tree densities do not meet Commercial Thinning standards, yet some level of commercial fuel hazard reduction is necessary. Three options are provided to the Board. The Board can adopt one of the options or none of the options.

Option 2 adds the requirement that postharvest stocking standards shall meet the basal requirements (but not the seed tree requirement) of the Selection silvicultural system standards for the Southern District when Commercial Thinning stocking levels are not found in the preharvest forest. While the differences between the Commercial Thinning standards and the Selection standards are not great, Option 2 allows inclusion of additional areas where single tree Selection silvicultural systems are used or where Commercial Thinning stocking standards are not present in the preharvest setting.

Option 2A provides for the basal area requirements of the Selection system standards for any Forest Practice District in the State, as low stocked forest conditions are found in areas other than southern California.

Option 2B requires both the basal area and seed tree retentions standards of the Selection system for post harvest minimum stocking standard. Option 2B would be applicable to all Forest Practice Districts in the State. Option 2B ensures that an adequate number of seed trees are retained on the site to accomplish reforestation goals of the seed tree silvicultural system.

Three options for modifying fuel treatment standards: Subsection (d) (5) modifies the post harvest vegetative treatment standards. These amendments are the most substantive changes to the regulatory proposal as they address which hazardous fuels must be reduced. All options of this amendment replace the "four foot" flame length requirement with standards that are more prescriptive and measurable. All options 1) provide hazard reduction for fuels which must be treated to avoid fire spreading to the larger trees, 2) provide fire intensity conditions (heat levels) that allow fire fighting crews to take direct suppression tactics for some forest settings, 3) reduce economic impacts and costs incurred by landowners by permitting efficient fuel removal, 4) diminish the likeliness that soil erosion environmental effects would occur due to landowners "cleaning" the forest floor, 5) increase retention of wildlife habitat in the form of hiding cover for small animals, and 6) improve forest resistance to invasive species by allowing forest floor vegetation cover to be retained.

All options for these amendments have a significant economic benefit to landowners. They reduce the expense of brush removal, and intensive treatment of debris on the forest floor. Expected savings of $200 to $400/acres in reduced fuel treatment costs, compared to the four foot flame length standards, could be attained while still substantially improving fire safe conditions.

The options for subsection (d)(5), Option 3, 3A , 3B or 3C, are mutually exclusive and one must be choosen.

Option 3 of subsection (d) (5) requires that any dead fuel in the post harvest stand be vertically separated from other fuels. Slash created by the timber harvesting operation would be treated to achieve a maximum depth of less than nine inches of activity slash after harvesting. This Option does not require treatment of existing brush, dead and down surface fuels, or general removal of dead trees or logs. The prescription would reduce fire hazard, especially in forest stands where there are many overstocked trees and little brush or debris on the forest floor.

Option 3A of subsection (d) (5) proposes prescriptions similar to the Board's defensible space standards adopted under 14 CCR 1299, in 2006. These standards were adopted for hazard reduction for areas within 100 feet of homes. Under this proposal, all geographic areas of the rule would use this standard. The standard requires spacing of surface and ladder fuels (grasses, downlogs, shrubs and trees). The prescription establishes both horizontal and vertical spacing between all post harvest fuels. This standard reduces brush and forest floor surface fuel loading conditions. Such conditions provide safer access for fire

fighters making direct attacks on flaming fire conditions. It will substantially limit vertical spread of fire, which is a prerequisite for fires which completely burn all standing vegetation and trees. This prescription will likely be more expensive to implement compared to Option 3, as removal of brush and dead and down surface fuels is required.

Option 3B of subsection (d) (5) proposes a combination of Option 3 and 3A where operations within 1320 feet of areas higher densities of homes, 500 feet of isolated structures, and 500 feet of fuelbreaks require treatment of all fuels (treatments specified in Option 3A). In other areas away from homes or fuelbreaks, treatment of logging slash created by harvesting operations (Option 3) is required. This Option balances the need for intensive (and more expensive) fuel hazard reduction near homes and fuelbreaks with lesser intensive (less expensive) treatments for roads and other feature outside of the wildland urban interface. It provides for a greater distance of more intensive fuel treatments for high density home areas compared to Option 3C below.

Option 3C of subsection (d) (5) also is a combination of Option 3 and 3A where operations within 500 feet homes of any structure and 500 feet from fuelbreaks require treatment of all fuels (treatments specified in Option 3A). Outside of 500 feet from structures and fuelbreaks, treatment of logging slash created by harvesting operations (Option 3) is required. This Option balances the need for intensive (and more expensive) fuel hazard reduction near homes and fuelbreaks with lesser intensive (less expensive) treatments for roads and other feature outside of the wildland urban interface. It provides a lesser distance of more intensive fuel treatments for high density home areas compared to Option 3B (500 feet vs. 1320 feet).

Subsection (d) (6) deletes fuel treatment text which was moved to another subsection for consistency of language.

ALTERNATIVES TO THE PROPOSED REGULATORY ACTION THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

The Board has considered alternatives to lessen the impact on small business, see ALTERNATIVES TO THE REGULATION CONSIDERED BY THE BOARD AND THE BOARD'S REASONS FOR REJECTING THOSE ALTERNATIVES in this initial statement of reasons. The Board has determined that all alternatives, and specifically the proposed action, would lessen any adverse impact on small businesses. This determination is based on all alternatives contributing to a reduction in regulatory burden to small businesses that chose to implement he regulation. Additionally, the regulation is optional to those who choose to implement it. As such, each person or entity will have made their own investigation and conclusions on any net benefits to be derived by implementing the regulation.

EVIDENCE SUPPORTING FINDING OF NO SIGNIFICANT ADVERSE ECONOMIC IMPACT ON ANY BUSINESS

This regulatory proposal is not considered to cause a significant adverse economic impact because it is a voluntary action. Each person or entity will have made their own

investigation and conclusions on any net benefits to be derived by implementing the regulation. The proposed action is especially designed to be "regulatory relief" from the current rule as it is expected to reduce the economic burden of treating hazardous forest fuels as required under the existing 14 CCR 1052.4.

The various Options under sub section 14 CCR 1052 (d) (5), which address the required treatment of fuels and establish post harvest treatment standards, offer different levels of economic savings compared to the existing rule.

ALTERNATIVES TO THE REGULATION CONSIDERED BY THE BOARD AND THE BOARD'S REASONS FOR REJECTING THOSE ALTERNATIVES

A rule language alternative was considered by the Board. The alternative represents a is related to expanding the maximum tree to be harvested.

1. **Expand diameter limit of the maximum tree to be harvested:** This alternative would increase the maximum tree size from 30 inches outside bark stump diameter to some greater size. By providing for larger tree removal, greater fire safety during extreme fire behavior situations can be attained.

   This alternative was rejected as monitoring results from field implementation over the last two years indicated that need for increased maximum tree harvest diameter, from a fuel hazard reduction perspective, required further study.

POSSIBLE SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECTS AND MITIGATIONS

The Board has considered adverse environmental effects from the proposed action. Such consideration was conducted to meet California Environmental Quality Act (CEQA) requirements for a project by using the functional equivalent certification to an EIR granted to the Board for its rulemaking process. Analysis in the original rulemaking OAL #05 0623-01 C, approved by Office of Administrative Law (OAL) and endorsed by the Secretary of State on August 15, 2005, has identified several resources that may be potentially affected. The proposed regulation imposes no new or additional potentially significant adverse environmental effects beyond those initially described in the original rule file. The analysis conducted for consideration of potential environmental effects from the above rulemaking file is included as a reference document for this determination.

The Board has incorporated mitigation measures as part of the previously mentioned permanent adoption of this regulation to eliminate or substantially lessen significant effects on the environment where feasible. Such mitigation measures include avoiding removal of larger trees; prohibiting operations in watercourses; no operation on steep slopes; no new road construction; watershed protection measured specifically designed for the unique water quality issues in the Lake Tahoe Basin; incorporating protection requirements of species that may be impacted including retention of special habitat elements (snags and down large woody debris) to maintain and enhance wildlife values, screening and cover to provide shelter and migration corridors; review and disclosure of

threatened, endangered or sensitive species, and no operation in areas with a Board defined sensitive species; and additional time for cultural resources review. Finally, all the operation provisions of the Forest Practice Rules (Title 14, CCR Chapter 4, 4, 5 and 10) apply to the proposed regulation. The standard operational provisions have been determined to be effective for environmental protection and have been certified by the Resources Agency Secretary as a functional equivalent to an Environmental Impact Statement. Together, the standard provisions of the Forest Practice Rules and the unique protective requirements of this regulation are expected to provide an insignificant level of environmental impacts.

Remaining unavoidable impacts, if any, are determined to be acceptable in light of the environmental, economic, legal, social, and other considerations, because the benefits of the regulation outweigh the significant and adverse impacts. With implementation of these mitigations, effects will be substantially lessened or eliminated. However, all impacts may not be avoided, particularly related to impacts on wildlife habitat and visual screening. If any impacts remain they are likely minor, and more than overridden by the catastrophic loses resulting from wildfire to life, property, human health, and natural resources.

TECHNICAL, THEORETICAL, AND/OR EMPIRICAL STUDY, REPORTS, OR DOCUMENTS

The Board of Forestry and Fire Protection consulted the following listed information and/or publications as referenced in this *Initial Statement of Reasons.* Unless otherwise noted in this *Initial Statement of Reasons*, the Board did not rely on any other technical, theoretical, or empirical studies, reports or documents in proposing the adoption of this regulation. The Technical Documents are grouped together based similarity of content for ease of organization.

Technical Documents I: research related documents

1. Forestry Berkeley, Vol 3 Issue 1: Fire and Fire Surrogate Study
2. Pacific Northwest Research Station. June 2004. Science Update, Reducing Fire Hazard: Balancing Cost and Outcomes.
3. USDA Forest Service. 2004. Urban Interface Communities: Preparing a Community Wildlife Protection Plan
4. USDA Forest Service. April, 2004. Fireshed Assessment: An Integrated Approach to Landscape Planning. R5-TP-017.
5. USDA Forest Service Pacific Southwest Research Station. A Proposed Long Term National Study of the Consequences of Fire and Fire Surrogate Treatments.
6. USDA Forest Service Rocky Mountain Experiment Station. April, 2004. Science Basis for Changing Forest Structure to Modify Wildfire Behavior and Severity. GT: RMRS-GTR-120
7. USDA Forest Service, Pcific Southwest Region. January 2004. Sierra Nevada Forest Plan Amendment: Final Supplemental Environmental Impact Statement. R5-MB-046.
8. United States General Accounting Office. Western National Forest: A Cohesive Strategy is Needed to Address Catastrophic Wildlife Threats. GAO/RCED-99-65.

9. United States General Accounting Office. Western National Forest: Status of Forest Service's Effort to Reduce Catastrophic Wildfire Threats. GAO/RCED-99-241.
10. Governor's Blue Ribbon Fire Commission, Report to the Governor.
11. Elrsiever. The Use of Shared Fuel Breaks in Landscape Fire Management. Forest Ecology and Management.
12. FRAP, California Department of Forestry and Fire Protection. 2003. Wildfire Risk to Assets.
13. FRAP, California Department of Forestry and Fire Protection. 2003. Trends in Wildland Fire
14. Sapsis, Dave. CDF Fire Plan, Hazard Assessment Methods. California Department of Forestry and Fire Protection
15. Stephens, Scott, Lewis. Evaluation of the Effects of Silvicultural and Fuels Treatment on Potential Fire Behavior in Sierra Nevada Mixed-Conifer Forest.
16. De Lasaux, Micheal. Can Residents in Forested Communities Effectively and Economically Reduce Excessive Fuels?
17. Nunamaker, Clare. June, 2004. Common Ground in Fuels Reduction.
18. Sierra Nevada Forest Plan Amendment. Final Supplemental Environmental Impact Statement.
19. Adams, Gerald/Smith, Ed. Incline Village/ Crystal Bay Defensible Space Handbook.
20. Alexander, Martin, PhD, RPF. Understanding Fire Behavior, The Key to Effective Fuel Management.
21. Anderson, Hal. Aids to Determining Fuel Models For Estimating Fire Behavior.
22. Bonnickson, Thomas, M. Fire Breaks Offer False Security, Symbolize Failure.
23. Carey, Henry; Schumann, Martha. Modifying WildFire Behavior- The Effectiveness of Fuel Treatments.
24. Cohen, Jack D. Reducing Wildland Fire Threat to Homes: Where and How Much
25. Gilmer, Maureen. 1994. California Wildfire Landscaping: Creating Bands Of Protection With Plants, Managing Native Vegetation, Getting Help: Public and Private Resources.
26. Minnich, Ralph. February, 1996. Fuel Reduction Guidelines.
27. Sapsis, D. July 25, 2005. Fire Behavior Modeling Considerations.
28. Scott, Joe, H. Canopy Fuel Treatment Standards for the Wild land-Urban Interface.
29. Stephens, Scott, L. Testimony for the Resources Subcommittee on Forest and Forest Health Field Hearing on the Sierra Nevada Forest Plan: Protecting Communities, Water, Wildlife, and the Forest of Sierra Nevada.
30. California Department of Forestry and Fire Protection. 2004 Wildfire Activity Statistics.
31. Agree et al.. The Use of Shared Fuel Breaks in Landscape Fire Management. Forest Ecology and Management.
32. California Codes Public Resources Code, Section 4291-4299.
33. California Department of Forestry and Fire Protection. Homeowners Checklist: How to Make Your Home Fire Service.
34. Nevada County Fire Plan. 2004. Defensible Space-Defensible Community Guidelines Summary.
35. Fire Safe Council. July, 2005. Living With Fire: A Guide for the Homeowner.
36. Miscellaneous. Newspaper Article
37. Pacific Northwest Research Station. June 2004. Science Update, Reducing Fire
38. Hazard: Balancing Cost and Outcomes.

39. USDA Forest Service Rocky Mountain Experiment Station. Assessing Crown Fire Potential by Linking Models of Surface and Crown Fire Behavior. RMRS-RP-29.
40. USDA Forest Service Rocky Mountain Experiment Station. April, 2004. Science Basis for Changing Forest Structure to Modify Wildfire Behavior and Severity. GT: RMRS-GTR-120
41. USDA Forest Service Pacific Northwest Research Station. September 1999. The Effects of Thinning and Similar Stand Treatments on Fire Behavior in Western Forests.
42. California Department of Forestry and Fire Protection. Controlling Nature's Wrath. (see compact disc). 2005.
43. County of San Diego. San Diego County Multiple Species Conservation Program. September 9, 2005.
44. CDF FRAP. Housing Densities by Wildfire Responsibility Areas. April 2005.
45. Oregon Department of Forestry. Oregon Forestland-Urban Interface Fire Protection Act, Property Evaluation & Self-Certification Guide- For Deschutes County. August 2004.
46. City of San Diego. Fire Safety and Brush Management for Private Property. May, 2004.
47. Nevada County Fire Plan. 2005. Appendix- Defensible Space Fuel Management Prescription.
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51. Keeley, John et al. 2004. Lessons From the October 2003 Wildfires in Southern California. Journal of Forestry.
52. Brooks, Matthew L et al. July 2004. Effects of Invasive Alien Plants on Fire Regimes. BioScience.
53. Greenlaw, Charles. December 13, 2005. "Defensible Space" Fuel Reduction Around Your Home in the Woods. Forest Landowner of California.
54. Berryman, Ron. Fall 2005. Wildfire and Your Property. Forest Landowner of California.
55. California Codes. December 12, 2005. Street and Highways Code Section 260-284. www.leginfo.Ca.gov
56. California State Scenic Routes. December 12, 2005. List of California State Scenic Routes. www. En.wikipedia.org
57. County of Santa Barbara. Living with Fire- A Guide for Homeowners in Santa Barbara County. Fire Safe Council.
58. Board of Forestry and Fire Protection official rule file, Defensible Space, 2005, OAL Action Number 06-0324-04S , pages 1-29, pages 201 to 241.
59. Board of Forestry and Fire Protection official rule file, Fuel Hazard Reduction, OAL #05 0623-01 C, pages 1-209; "CUMULATIVE EFFECTS ANALYSIS AND ADDITIONAL DISCUSSION OF POSSIBLE SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECTS" and pages 02066 to 02100.
60. Reid, Leslie. November, 2005. Channel erosion, mass wasting and fuel treatments. USDA FS Pacific Southwestern Research Station.
61. Fuel Hazard Reduction Emergency /regulation: Field Monitoring Results Update. May, 2005.

62. California Department of Forestry and Fire Protection. December, 2006. Fuel Hazard Reduction Emergency and Forest Fire Prevention Exemption Summary 2004 to Present.
63. California Department of Forestry and Fire Protection. May, 2007. Fuel Hazard Reduction Emergency and Forest Fire Prevention Exemption Notices.
64. California Department of Forestry and Fire Protection. March 14, 2007. Field comments La Malfa Exemption (and Fuel Hazard Reduction Emergency).
65. Martin, Charlie. Email dated March 13, 2007.
66. Violett, Paul. April 11, 2007.Fule Hazard Reduction Case Study, Reagan Freedom Sale.
67. Ostrowski, Jim. May 17, 2007. Fuel Hazard Reduction Exemption and Emergency Fuel Treatment Strategy.
68. California Department of Forestry and Fire Protection. May 31, 2007. Behave Plus 3.0.2 fire behavior computer analysis.
69. Scott, Joe. Burgan, Robert. June, 2005. Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel's Surface Fire Spread Model. USDSA FS Rocky Mountain Research Station, GTR RMSRS-GTR-153.

Pursuant to Government Code 11346.2(b)(6): In order to avoid unnecessary duplication or conflicts with federal regulations contained in the Code of Federal Regulations addressing the same issues as those addressed under the proposed regulation revisions listed in this *Statement of Reasons*; the Board has directed the staff to review the Code of Federal Regulations. The Board staff determined that no unnecessary duplication or conflict exists.

PROPOSED TEXT

The proposed revisions or additions to the existing rule language are represented in the following manner:

1) language existing before 8/15/07 is shown in PLAIN TEXT,
2) Proposed adoptions, deletions and amendments to the current and interim language are shown as ~~STIKETHROUGH~~ and UNDERLINED

All other text is existing rule language.

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